REMARKS

Reconsideration of this application is respectfully requested.

Upon entry of the foregoing amendment, claims 1, 50-80 and 82-95 are pending. Claims 1, 69 and 92 are amended. New claims 93-95 are added.

Applicants respectfully request entry of the above amendment and submit that the above amendment does not constitute new matter. Support for the amendments to claims 1 and 92 and new claim 95 can be found, *inter alia*, in the specification at page 6, lines 20-21. Support for the amendment to claim 69 can be found, *inter alia*, in the specification at page 10, lines 6-12. Support for new claims 93 and 94 can be found, *inter alia*, in the specification at page 14, line 2, and claim 1 as originally filed.

Rejection under 35 U.S.C. § 112, second paragraph

Claim 69 was rejected under 35 U.S.C. § 112, para. 2, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. The Office Action states that "it is unclear what is implied by the term, 'artificial.'" Office Action of August 20, 2004, page 2.

Amended claim 69 does not recite the term "artificial." Therefore, Applicants submit that the amendment to claim 69 renders the rejection under 35 U.S.C. § 112, para. 2, moot.

Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claim 69 under 35 U.S.C. § 112, para 2.

Rejection under 35 U.S.C. § 102

Claims 1, 50-69, 70-73, 79, 80, 82, 83, 85-87 and 92 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 6,143,527, issued to Pachuk et al. ("Pachuk"). Applicants respectfully traverse this rejection.

Anticipation can be established only by a single reference that discloses each and every element of the claimed invention. *See Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1270 (Fed. Cir. 1984); M.P.E.P. § 2131 at 2100-73 (8th ed.,

Rev. No. 2). If a single element required by the claim is missing in the reference, there can be no anticipation. *See Structural Rubber*, 749 F.2d at 707, 223 U.S.P.Q. at 1271-72.

Applicants have amended independent claims 1 and 92 to recite "ligating the hybridized fragments having immediately adjacent ends with a ligase to form random recombinant polynucleotide sequences."

Pachuk discloses no such formation of random recombinant polynucleotide sequences. Rather, according to Pachuk, it discloses "chain reaction cloning." Indeed, as Pachuk states,

> Chain reaction cloning (CRC) employs a thermostable ligase to join DNA fragments *in a desired order*. . . . This method . . . joins fragments *in a precise order determined by the experimenter.*

Pachuk, col. 14, ll. 59-65 (emphasis added). Thus, Pachuk does not disclose ligating hybridized fragments having immediately adjacent ends with a ligase to form random recombinant polynucleotide sequences. Consequently, Pachuk does not disclose each and every element of Applicants' invention encompassed by claims 1 and 92. Accordingly, the amendment should satisfy the rejection and put claims 1 and 92, as well as dependent claims 50-73, 79-80, 82-83 and 85-87, in condition for allowance.

Nor does Pachuk disclose each and every element of new independent claim 94. Pachuk does not disclose ligating hybridized fragments having immediately adjacent ends with a ligase to form at least two recombinant polynucleotide sequences. Therefore, new claim 94, as well as dependent claim 95, are also in condition for allowance.

Applicants respectfully submit that any alleged argument of anticipation has been effectively rebutted because Pachuk does not disclose each and every element of the claimed invention. Thus, Applicants respectfully request that the rejection under 35 U.S.C. § 102(e) be withdrawn.

Claims 1 and 88-91 were rejected under 35 U.S.C. § 102(a) as allegedly anticipated by Coco et al., *DNA Shuffling Method for Generating Highly Recombined Genes and Evolved Enzymes*, 19 NATURE BIOTECH. 354-359 (April 2001) ("Coco"). The Office Action states:

> The instant rejection predicated on the fact that the parent application 09/723,316, does not have a proper written support under 35 U.S.C. § 112, first paragraph, for the limitation of cleaving the single strand overlaps with endonuclease such as Flap

> endonuclease. The effective filing date for the instant claims, therefore, has been determined to be April 25, 2001.

Office Action of August 20, 2004, page 6. Applicants respectfully traverse this rejection.

Applicants point out that claim 1 does not contain the limitation relating to cleaving single-stranded nucleic acids or endonuclease. Thus, the argument in the Office Action that this limitation does not have written description support is moot with respect to claim 1. For at least this reason, the Office Action is incorrect in determining the effective filing date for claim 1 to be April 25, 2001. Coco has a publication date of April 2001. As the Office Action is incorrect in determining the effective filing date for claim 1 to be April 25, 2001, Coco is not prior art under 35 U.S.C. § 102(a) to claim 1. Therefore, Applicants request the Examiner to reconsider and withdraw the rejection of claim 1 under 35 U.S.C. § 102(a).

Regarding claims 88-91, Applicants respectfully submit that these claims properly receive priority to U.S. Appl. No. 09/723,316 ("the '316 application"), which is the parent application of the instant application, because specification as originally filed in the '316 application provides written description support under 35 U.S.C. § 112, para. 1, for claims 88-91 of the instant application. For example, the specification of the '316 application states:

> An especially preferred embodiment of the process of the invention consists of adding at step (c) and/or at step (d) enzymes capable of recognizing and of cutting in a specific manner the non-hybridized ends of fragments, when these overlap with other hybridized fragments on the same template. A preferred example of this type of enzyme is the Flap endonuclease enzyme (10).
>
> . . .
>
> In a particular embodiment of the process of the invention using a ligase active at high temperature and preferably thermostable at step (d), the endonucleases . . . will have the same properties of thermoresistance and of high temperature activity as said ligase.

the '316 application, Specification, page 6, lines 26-31; page 7, lines 16-21.

Therefore, as the specification of the '316 application provides proper written description support for claims 88-91 of the instant application, these claims receive priority at least back to

the filing date of the '316 application, which is November 28, 2000.[1] Consequently, Coco is not prior art under § 102(a) to claims 88-91 because its publication date is April 2001. Accordingly, Applicants request the Examiner to reconsider and withdraw the rejection of claims 88-91 under 35 U.S.C. § 102(a).

Rejection under 35 U.S.C. § 103

Claims 74-78 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pachuk in view of U.S. Patent No. 6,117,679, issued to Stemmer et al. Because claims 74-78 all depend, either directly or indirectly, from claim 1, which is now believed to be free of any prior art, the rejection of claims 74-78 is likewise believed to have been rendered moot.

Claim 84 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pachuk in view of U.S. Patent No. 5,821,091, issued to Dolganov. Because claim 84 indirectly depends from claim 1, which is now believed to be free of any prior art, the rejection of claim 84 is likewise believed to have been rendered moot.

Claims 88-91 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pachuk in view of Coco. For the reasons discussed above with respect to the rejection of claims 88-91 under 35 U.S.C. § 102(a), Coco does not qualify as prior art to claims 88-91. Thus, for at least those reasons, the rejection of claims 88-91 under 35 U.S.C. § 103(a) over Pachuk in view of Coco is likewise believed to have been rendered moot.

[1] Applicants further note that the '316 application, to which the instant application claims priority, claims the benefit of PCT Appl. No. PCT/FR99/01973, filed August 11, 1999, and French Patent Appl. No. FR98/10338, filed August 12, 1998.

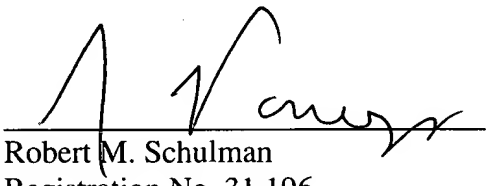
CONCLUSION

Applicants respectfully request entry of the above claim amendments.

All of the stated grounds of rejection have been properly traversed, accommodated or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

In view of the above claim amendments and remarks, early notification of a favorable consideration is respectfully requested. In the event any issues remain, Applicants would appreciate the courtesy of a telephone call to their representatives to resolve such issues in an expeditious manner. The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-0206.

Respectfully submitted,

Dated: December 20, 2004 By: 

Robert M. Schulman
Registration No. 31,196

Jessica L. Parezo
Registration No. 50,286

HUNTON & WILLIAMS LLP
Intellectual Property Department
1900 K Street, N.W.
Suite 1200
Washington, DC 20006-1109
(202) 955-1500 (telephone)
(202) 778-2201 (facsimile)

RMS/JLP:cdh